

CLAIMS

1. A method for ensuring the security of a two-wheeled vehicle or the like;

characterized in that it comprises the following steps:

- detecting at least one of the following parameters of the vehicle: engine
5 running/stopped, tilt, parked/moving, presence of the driver on the vehicle, geographical localization,
- determining according to a logic for processing the detected parameters, and the state of at least one enabling/disabling command of the system, a system state taken from the following system states:
10 .a theft surveillance state, when the engine is stopped,
.an accident surveillance state, when the engine is running,
.a pre-alarm state caused by detecting a movement, a vibration, a shock or a power supply cut, while the vehicle was in the theft surveillance state, or subsequently to the starting of the vehicle,
15 .a disabled surveillance state (surveillance off) subsequently to a command for disabling the system.
- detecting, depending on the state of the system and on the detected parameters, one of the following "alarm" states:
20 .the theft alarm state, when subsequently to the pre-alarm state, the system has detected a sensitive parameter which is repeated and/or maintained during a predetermined period of time,
.the accident alarm state when subsequently to the accident surveillance state, the system detects an extended loss of verticality,
- when passing to one of the "alarm" states, elaborating a message
25 comprising data for identifying the vehicle, its position, and data corresponding to the state of the system as well as telephonically transmitting this message to a remotely located caller or to a surveillance center.

2. The method according to claim 1,
characterized in that if, when passing to an alarm state, it does not manage to
achieve transmission of said message to the callee, it carries out a succession
5 of connection attempts until transmission is completed.

3. The method according to any of claims 1 and 2,
characterized in that it comprises the analysis of the following parameters:

- movements or vibrations detected in the pre-alarm mode for a
10 predetermined time TVP3,
- a tilt detected in the pre-alarm mode for a time "Tip",
- a displacement of the motorcycle detected by the central localization
facility in the pre-alarm mode over a predetermined distance, and/or
- the analysis of a combination of parameters such as an external power
15 cut, associated with brief detection of motion, and/or
- the analysis of a succession of parameters such as the loss of verticality,
with the engine running, associated with the detection of a sudden drop
in speed by the central localization facility, this combination of
successive parameters meaning the presence of an accident.

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4. The method according to any of the preceding claims,
characterized in that only the surveillance center is authorized to enable or
disable the system.

25 5. The method according to claim 4,
characterized in that it comprises a shut-down mode wherein the detection
functions are inhibited and an alarm is neither detected nor sent back, this
shut-down mode comprising the following steps:

- having the owner of the vehicle, the motorcycle, call a surveillance
30 center in order to request shutting down of the system,

- having the owner identified by the surveillance center which asks the owner to transmit to it his/her identifier and/or his/her password,
- having the owner order a disabling function to be executed by the surveillance center,
- 5 - when disabling is carried out by the surveillance center, emitting a sound signal, sign of the shutting down.

6. The method according to any claims 4 and 5,
characterized in that it comprises a start-up mode comprising the following
10 steps:

- having the owner of the vehicle call the surveillance center in order to request starting up of the system,
- having the owner of the vehicle identified by the surveillance center by means of an identifier and/or a pass-word,
- 15 - having the owner order an enabling function to be executed by the surveillance center,
- emitting a sound signal, sign of the enabling.

7. The method according to any of the preceding claims,
20 characterized in that it comprises a transient state for stopping the surveillance (SURVEIL_OFF) which is established during a period (Ts) to be counted from the beginning of surveillance, when the vehicle is stationary, and in that, at the outcome of said period (Ts), said transient state is followed by a (SURVEIL_VOL) state.

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8. The method according to any of the preceding claims,
characterized in that it carries out control actions subsequent to receiving control signals transmitted by the surveillance center (CS).

30 9. The method according to any of the preceding claims,

characterized in that it comprises said parameters to provide the following functions:

- in-operation detection of extended loss of verticality which is a potential sign of accident,
- 5 - start-up or shut-down of the system by the surveillance center (CS), depending on information contained in the messages transmitted by the communications unit (UT), in order to facilitate technical interventions for example,
- storage at regular intervals of the position of the motorcycle in order to transmit these data to the surveillance center,
- 10 - remote control of various outputs (horn, blinker, power supply, ...),
- management of the level of the battery (BA₁) in order to send an alert message when this level becomes low.

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10. The method according to any of the preceding claims, characterized in that the detection of "alarm" states is based on several types of detection (displacement/tilt, power supply cut), associated with localization by a central localization facility (CL) and with a concordance analysis.

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11. A device for providing security of two-wheeled vehicles and the like, in accordance with the method according to any of the preceding claims, characterized in that it comprises a processor coupled with a central geographical localization facility (CL) and with a communications unit (UT),
25 with a cellular telephone network able to communicate with a caller, said processor being further connected to a plurality of detectors comprising at least one detector for detecting the running/stopped (M/A) state of the engine of the vehicle, a detector (AC) for the displacement of the vehicle and a tilt detector (CV), and with means for identifying the vehicle and/or its driver, and in that
30 the processor is programmed in order to centralize the data from the detectors,

to store them and then to select them, by means of a logic for processing said data, a state of the device among a plurality of predetermined states incorporating one or more sensitive states revealing a theft of an accident and, when it has selected a sensitive state, to compose a message comprising data
5 relative to this state as well as data for identifying the vehicle and/or its driver, and a geographical localization data, and to cause this message to be transmitted to the caller via the communications unit and the cellular telephone network.

10 12. The device according to claim 11,
characterized in that it further comprises means for detecting the normal running of the vehicle and/or means for reconstructing the route of the vehicle from inertial data provided by an accelerometric detector and/or from localization data.

15 13. The device according to any of claims 11 and 12,
characterized in that it comprises control means acting from control signals transmitted by the communications unit.

20 14. The device according to any of claims 11 to 13,
characterized in that it comprises a memory (M_1) containing vehicle identification data and/or a device for remotely reading (LD) a transponder (TR) worn by the driver of the vehicle and in which an identifier of said driver is stored in memory.

25 15. The device according to any of claims 11 to 14,
characterized in that said processor is further connected to a voice synthesis circuit comprising a memory unit (M_2) containing digital data corresponding to phonemes and a voice encoder (EV) used for generating audio messages
30 transmissible through the communications unit (UT).

16. The device according to any of claims 11 to 15,
characterized in that it further comprises a receiver (RC), tuned on a
transmitter mounted in a remote control case (TC) to equip the owner of the
vehicle, this remote control case comprising means for controlling the
5 disabling of the surveillance function and control means for triggering an
immediate "emergency call" alarm regardless of the state of the vehicle or of
the device.